



## ISSCT ENTOMOLOGY WEBINAR

Thursday 18 August 2022

11:00 AM GMT

### “Advances in Proactive and Non-chemical Sugarcane Insect Management”

As part of the series of Webinars that will be organized by the ISSCT in 2022 for its different disciplines, the **Entomology** Webinar of the Biology Commission will be held on Thursday 18 August 2022 from 11:00 AM GMT to 2:00 PM GMT.

#### Short Biodata about the Presenters

**Kevin Powell (Sugar Research Australia, Meringa, Queensland, Australia)** holds a PhD in Entomology from the University of Durham (UK), an MSc in Agronomy from the University of Nottingham (UK) and a Postgraduate Diploma in Climate Change for Primary Industries (University of Melbourne, Australia). Dr Powell has published over 100 peer reviewed papers and book chapters. A globally focused and committed Principal Research Scientist, Project Leader, Team Manager and PhD Supervisor, with applied entomology and plant biosecurity experience working in Australia, Papua New Guinea, Myanmar, Indonesia, Italy, Syria and the UK. Internationally recognised for the ability to innovate novel and practical multidisciplinary approaches to endemic and exotic plant biosecurity pest management including development of molecular and remote sensing approaches for detection of soil borne pests, development of in vitro and electrophysiological techniques for studying feeding behaviour of sap-sucking insects, development of insect-specific quarantine protocols, biotype-specific integrated control options, and alternative and chemical insecticide screening, insect artificial diet development and variety trials. Since moving to Sugar Research Australia in 2017 as Entomology Leader his research has focused on canegrubs, soldier flies, moth borers, Hemipteran vectors and yellow canopy syndrome.

**Germán Vargas (Centro de Investigación de la Caña de Azúcar de Colombia, Cali, Colombia)** has a major in Agronomy from the National University of Colombia and a PhD in entomology from Kansas State University. He has worked at the Colombian Sugarcane Research Center, focusing on IPM on sugarcane pests. He has developed applied and basic research on biological control, host plant resistance, and application of crop protectants, mostly for sugarcane borers *Diatraea* spp. and sugarcane spittlebugs *Aeneolamia varia*. His research has focused on promoting the biological control of *Diatraea* spp. via augmentation of tachinids, trichogrammatids and braconids. Additional efforts have been made on sampling procedures, host plant resistance, and taxonomic status of the pest complex. In addition, efforts have been implemented on proposing conservation biological control as the main larval parasitoid of the sugarcane borers in Colombia is *Genea jaynesi*, a wild natural

enemy. Dr. Vargas has recently joined the Ornamental Entomology Lab of the University of Florida Tropical Research and Education Center as a Post-doctoral Associate. He is working towards the development of an IPM program for the hibiscus bud weevil, *Anthonomus testaceosquamosus*, focused on biological control alternatives such as entomopathogenic nematodes and fungi. He has published more than 40 papers, considering scientific journals and extension manuals. Since 2018, he has served as the president of the International Organization for Biological Control in its Neotropical Regional Section (IOBC-NTRS).

**Lawrence Nkosikhona Malinga (South African Sugarcane Research Institute, Mount Edgecombe, South Africa)** has worked as a Research Entomologist for South African Sugarcane Research Institute (SASRI) since December 2020. He holds a PhD in Entomology from the University of KwaZulu-Natal, a BSc in Zoology and Entomology, a BSc (Hons) and an MSc in Entomology from the University of Fort Hare. His current task is to conduct and collaborate in research, technology development, and knowledge exchange projects requiring entomological expertise in controlling sugarcane pests. He is the Project Manager for Sterile Insect Technique for Eldana management: Resource development and pilot release programme.

His current research projects at SASRI include:

- Comparison of diversity and abundance of non-target organisms on Bt and non-Bt sugarcane
- Sterile Insect Technique for eldana management under cage and field conditions
- Eldana F1 Sterile Insect Technique: Assessment of X-ray irradiation as an alternative to gamma irradiation

From January 2005 to November 2020, Dr Malinga worked as a Research Entomologist for Agricultural Research Council Crops – Institute for Industrial Crops, mainly on the biocontrol of cotton pests. Later, he became in charge of the institute's Entomology, Nematology, and germplasm collection sections. His responsibilities included training cotton farmers and extension officers in South Africa, Malawi and Zambia. Dr Malinga was also a Project Manager for sustainable rural livelihood projects in KZN, Limpopo and Mpumalanga, which were funded by DRDLR. Through this programme, he successfully managed and completed five projects valued at over R 100 million. He further conducted registration trials for Bayer SA.

Dr Malinga is a Reviewer for Crop Protection, American Journal of Agriculture and Forestry and IntecOpen Book Publisher. He was also a SEACF Secretary and currently serves on the Advisory Board for Biological Sciences Member at the University of Free State. He is also a member of the Editorial Board of the Journal of Modern Agriculture and Biotechnology. He has published several peer-reviewed papers, including a book chapter and presented research papers at national and international conferences. He is currently supervising postgraduate students.

**Caroline Izabel Ribeiro Sakuno (Centro de Tecnologia Canavieira, Piracicaba, São Paulo, Brazil)** has almost 10 years of experience in Research and Development in the private sector and currently works as an entomologist at Centro de Tecnologia Canavieira (CTC), which she joined 2017. She has a master's degree in Entomology from the University of São Paulo (USP), an MBA in project management from ESALQ - USP, and a BSc in agronomy engineering from the Federal University of São Carlos (UFSCar).

Her current responsibility is to lead a team of entomologists focused on developing transgenic Bt sugarcane events against the main sugarcane pests in Brazil. She is also responsible for field monitoring of the emergence/evolution of resistant insects to the Bt sugarcane products already available in the Brazilian market. Her projects include:

- Selection of sugarcane events genetically modified for management of lepidopterans (*Diatraea saccharalis* and *Telchin licus*) and coleopterans (*Sphenophorus levis*)
- Monitoring the frequency of Cry1Ab and Cry1Ac resistance alleles of *D. saccharalis* populations in Brazil
- Investigation of the confounding effects of genetic background heterogeneity among *D. saccharalis* genotypes on the measurement of fitness costs and dominance levels of Bt resistance
- Evaluation of the performance of dual-gene susceptible heterozygous and resistant genotypes of *Diatraea saccharalis* on non-Bt and Bt sugarcane containing pyramided Bt genes.